OH Doc No. 21

Recd From: Dave Aldridge

Date Recd: 24/4/07

Presentation on behalf of The Friends of Rossport

Captain D J Aldridge PhD

When the news circulated that the design of the Union Carbide plant at Bhopal included the storage of 40 Tons AIC on site. An engineer at BASF [who also used AIC] remarked that it amounted to "criminal folly".

I believe that the proposal to store 3627 Tons of Methanol at Ballinaboy in close proximity to houses and release upwards of 1800 tons per year into the environment could lead to another Bhopal here in County Mayo.

Methanol –it's properties as a high-risk material and hazards to human life.

TOXIC

To breath, or in contact with the skin
Central Nervous System Poison
Attacks Optic Nerve
Attacks the Retina
Fatal dose 80 to 150 ml, 200 ppm vapor
Non fatal dose has 3 stages:
1) Intoxication and sleep
2) Latent period of 10-15 hours
3) CNS effects, headache,dizziness, abdominal, neck and leg pain, delirium, nausea, coma, death.

Antidotes are known

Highly Inflammable and Explosive

Flashpoint is 11C
Energy content 50% of Gasoline.

Cold Venting, and Flaring of Methane and other gas.

This material which has 23 time greater effect as a Greenhouse gas than CO_2 should be burned in the Gas Turbines to CO_2

Methanol –it's properties as a high-risk material and hazards to human life.

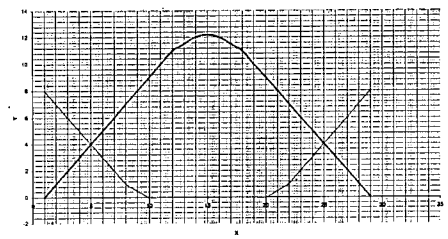
Acute methanol intoxication is manifested initially by signs of narcosis. This is followed by a latent period in which formic acid accumulates in the body causing metabolic acidosis. Severe abdominal, leg, and back pain occur and visual degeneration can lead to blindness.

1. Humans - Ingestion of 80 to 150 mL of methanol is usually fatal to humans (HSDB 1994). One worker died from exposure to vapor ranging from 4000 to 13,000 ppm over 12 hours (ACGIH 1991). The concentration of 4000 ppm is roughly equivalent to a total of 1140 mg/kg over the 12 hour period (see end note 2). Poisoning by nonlethal doses can be described in three stages: (1) narcotic stage similar to ethanol; (2) latent period of 10-15 hours; (3) visual disturbances and central nervous system lesions (Rowe and McCollister 1981). Visual disturbances can lead to blindness due to edema of the retina and atrophy of the optic nerve head (HSDB 1994). Third-stage CNS lesions include headache, dizziness, abdominal, back, and leg pain, delirium that can lead to coma, and nausea (HSDB 1994). Formic acid production causes severe metabolic acidosis (Rowe and McCollister 1981).

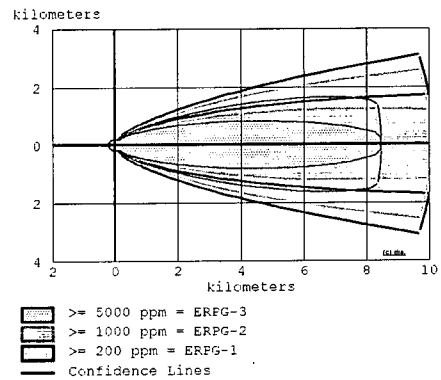
2. Animals - Oral LD50 values for methanol in animals are 0.4 g/kg in the mouse, 6.2 to 15 g/kg in the rat, 14.4 g/kg in the rabbit, and 2 to 7 g/kg in the monkey (Rowe and McCollister 1981). The LD50 for dermal application to rabbits is 20 mL/kg (approximately 16 g/kg) (Rowe and McCollister 1981). Dose-response data for inhalation vary with species, dose, and duration (8800 ppm for 8 hours to 152,800 ppm for 94 minutes). Symptoms of intoxication include incoordination, salivation, lethargy, narcosis, and death (Rowe and McCollister 1981).

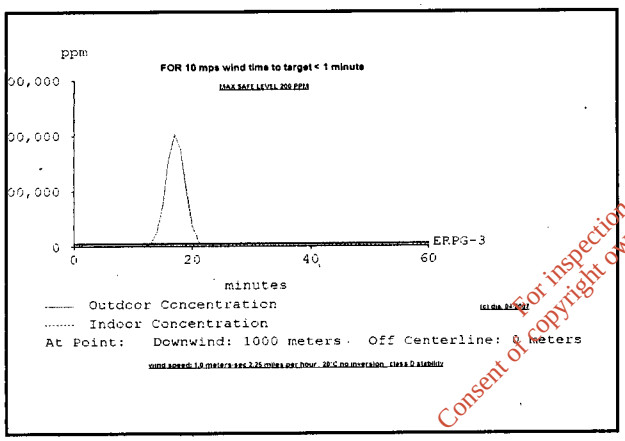
Problems of interpretation following the Buncefield (Hemel Hempstead, Herts.) explosions and fire. (December 11, 2005)

Mathematical modeling, uses, abuses, and limitations.



A model is not the real world, only an approximation to it!





Escape time available for the nearest (undocumented) community

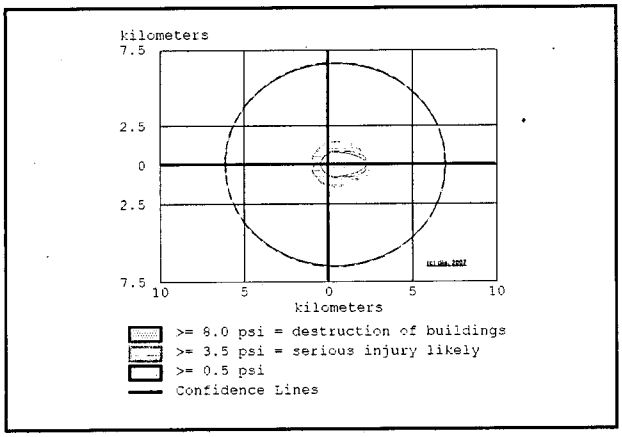
– Bunowna Village -

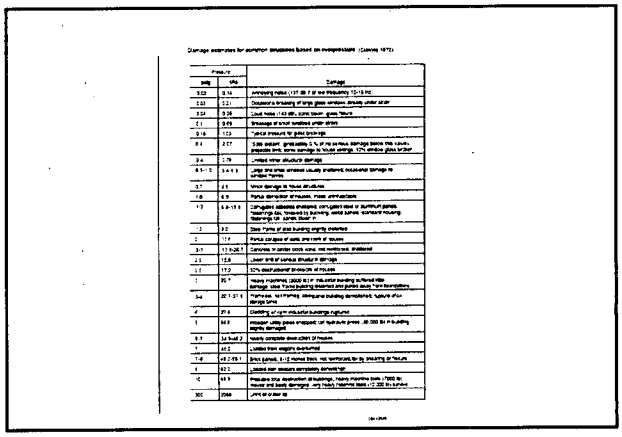
Less than one minute for a 16 miles per hour wind .

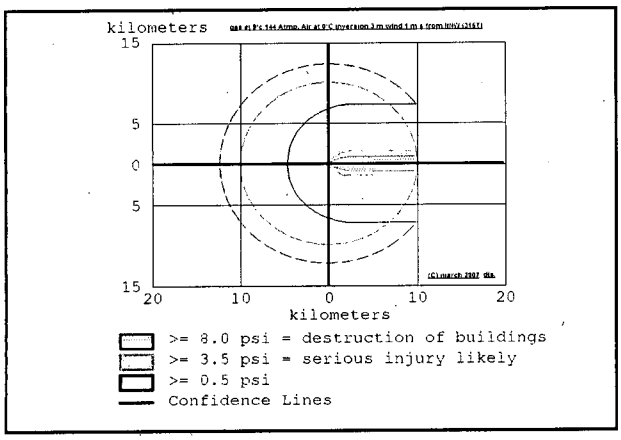
A BHOPAL STYLE DISASTER IN THE MAKING!

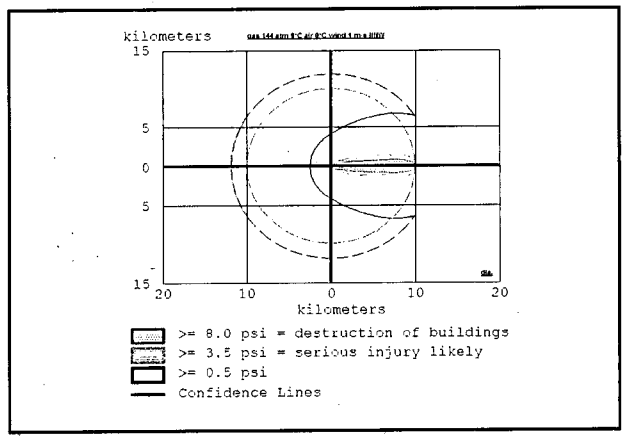
Wasn't this what the EU's Seveso Directives and the (Irish) EPA supposed to prevent happening ?

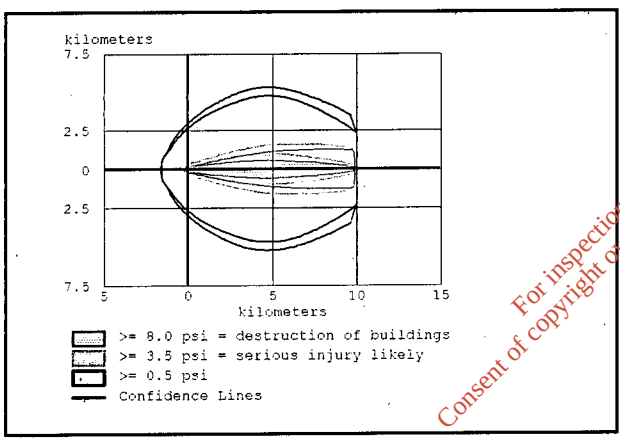
It is totally illogical that an IPPC license was not required to be obtained BEFORE construction commenced for such a hazardous plant.

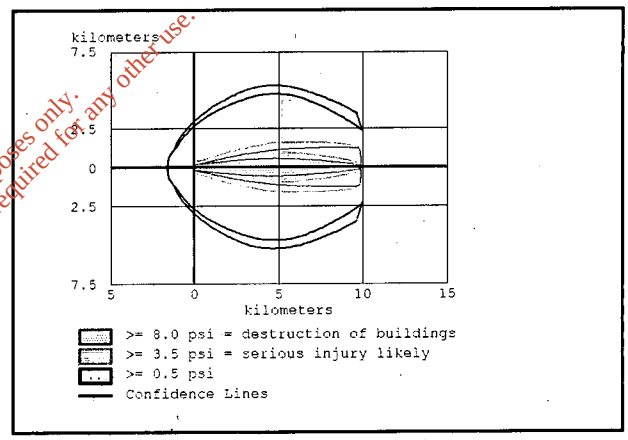












Looked at 5 major accidents

Banty Bay
Bhopal
Flixborough
Piper Alpha
Challenger Space Shuttle
Humber Refinery
Texas City Refinery

Common threads:

DECISIONS AT HIGHEST LEVEL (BOARD).

COST CUTTING,

REDUCED MANNING,

REDUCED SKILL LEVEL,

BACKLOGS OF MAINANCE,

QUICK FIX MENTALITY.

Shell's record in the North Sea

35 Matching results found from 45820 total records : Showing Page 3 of 4, results 21 to 30

Notice Numbe	Recipient's Name	Notice Type	Issue Date	Local Authority	Main Activity
9990478	Shell UK Limited	Prohibition Notice Immediate	20/11/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990484	Shell UK Limited	Prohibition Notice Immediate	16/11/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990475	Shell UK Limited	Improvement Notice	02/11/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990473	Shell UK Limited	Improvement Notice	27/10/2004		EXTRACT PETR/GAS
9990467	Shell UK Limited	Improvement Notice	08/10/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990468	Shell UK Limited	Improvement Notice	08/10/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990447	Shell UK Limited	Improvement Notice	01/06/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990433	Shell UK Limited	Prohibition Notice Immediate	25/03/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990413	Shell UK Limited	Improvement Notice	09/02/2004	Aberdeen City UA	EXTRACT PETR/GAS
9990412	Shell UK Limited	Prohibition Notice Immediate	06/02/2004	Aberdeen City UA	EXTRACT PETR/GAS

300319346 Brent Bravo - 26/7/06 - Re-issue - compliance date 31/12/06 - You have failed to, ensure the health and safety of your employees and others by failing to ensure that the 12" Oil Export Pipework P-137-1106Y, so far as is reasonably practicable, has been maintained in an efficient state, in efficient working order and in good repair.

9990317
There was an uncontrolled release of flammable or explosive substances on the Shearwater installation on the 25th November 2002 that released from abnormal activities during a process isolation that had not been subject to suitable and sufficient risk assessment thereby exposing employees and those not in your employment to risks to their H & S.

300463514 Shearwater
reissue kp3 notice. Shell have failed to implement a suitably resourced maintenance regime to achieve compliance with their own maintenance strategy. This has lead to excessive backlog of maintenance activities for safety critical equipment and non safety critical equipment leading to poor working order and repair of equipment.
served against Shell UK Limited on 30/11/2006

Appendix F
Documents required to understand QRA D

1 Corrib Project Risk Assessment Procedure, ERT Doc. No. COR-15-PR-014-0.

3 Design Code Comparison, JPK Document No. 05-2102-02-P-3-501.

4 Population Density Analysis, JPK Document No. 05-2102-02-P-3-500.

5 Onshore Design Basis, JPK Document No. 05-2102-02-P-3-500.

6 Cathodic Protection Design Report, JPK Document No. 05-2102-02-K-3-520.

7 HAZID for Onshore Section, JPK Document No. 05-2102-02-P-3-355.

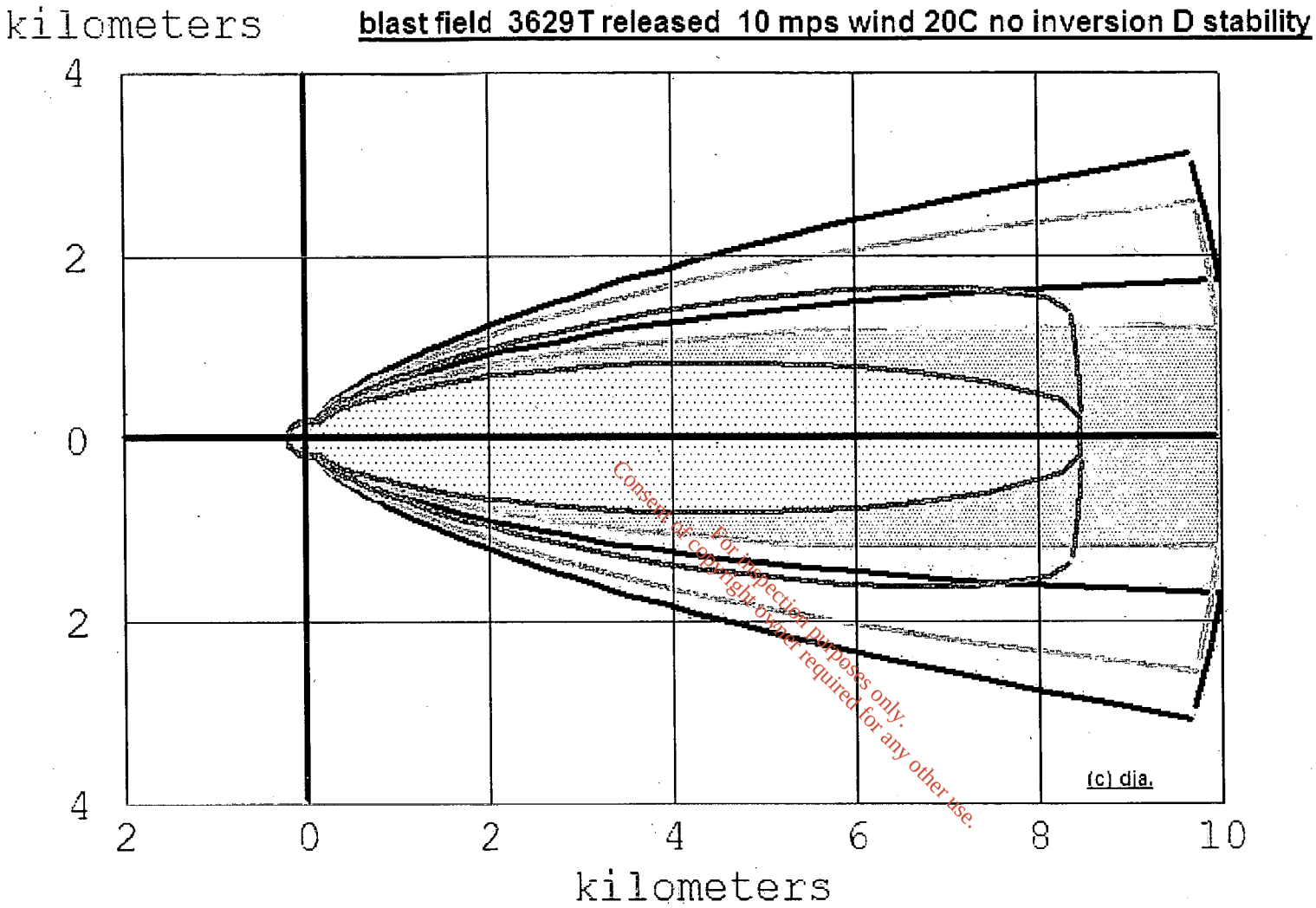
9 Corrib Export Pipeline, Alignment Sheet 2 of 6, JPK Document No. 05-2102-02-P-3-505.

10 Onshore Section Mechanical Design Report, JPK Doc. No. 05-2102-02-M-3-515.

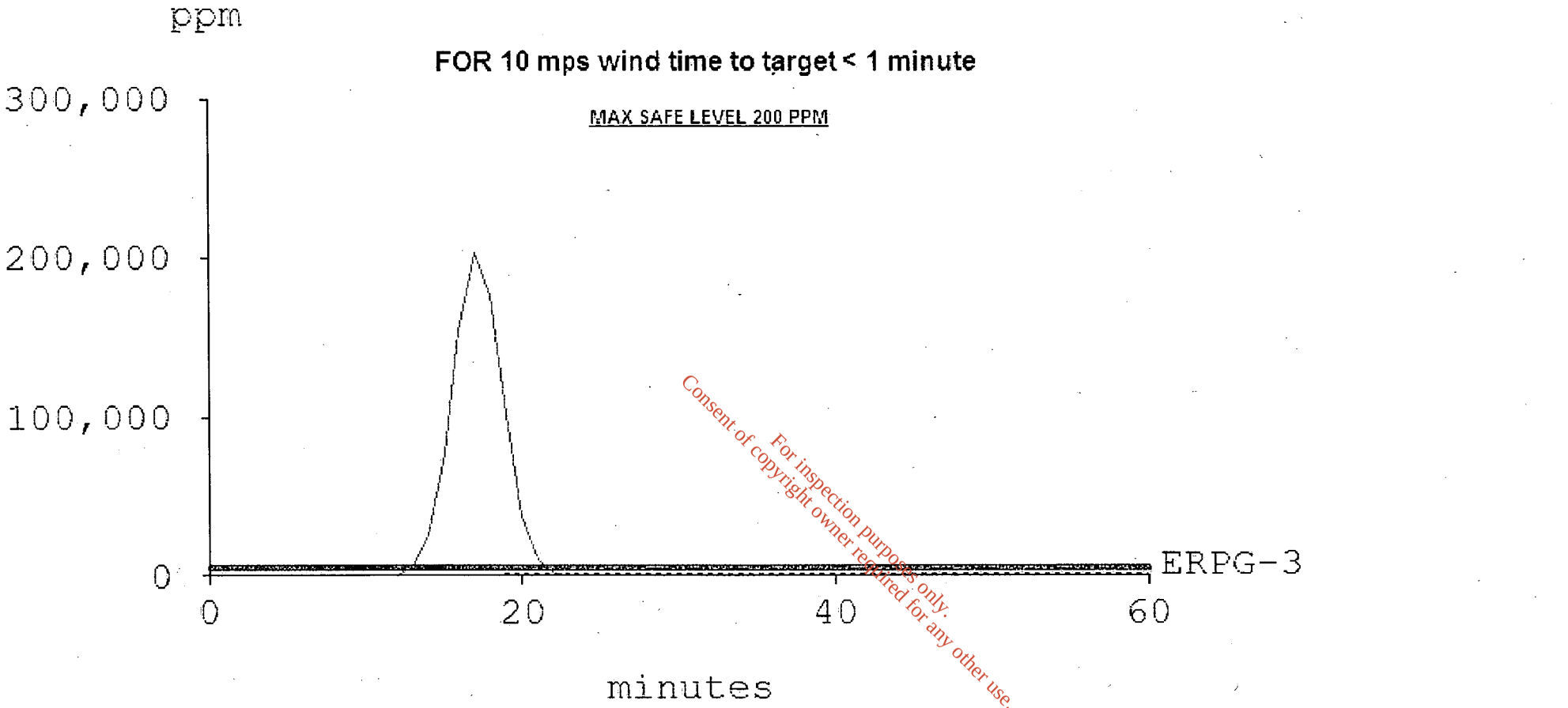
20 Corrosion Monitoring Report, JPK Document No. 05-2102-01-P-3-501.

21 Corrosion Allowance Evaluation, JPK Doc. No. 05-2102-01-P-3-135.

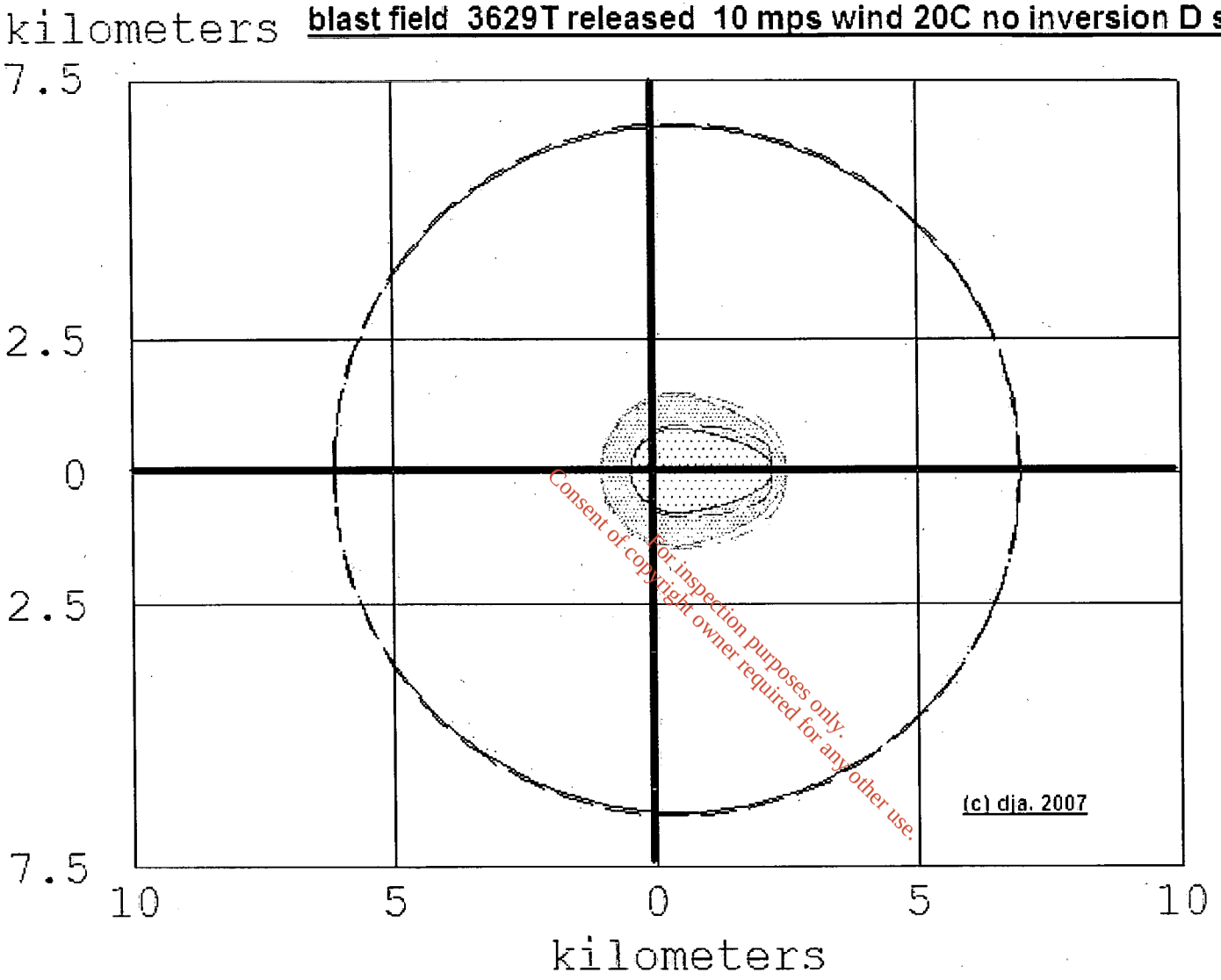
as well as a copy of the "Risk Register" for this pipeline or any changed to the current design.

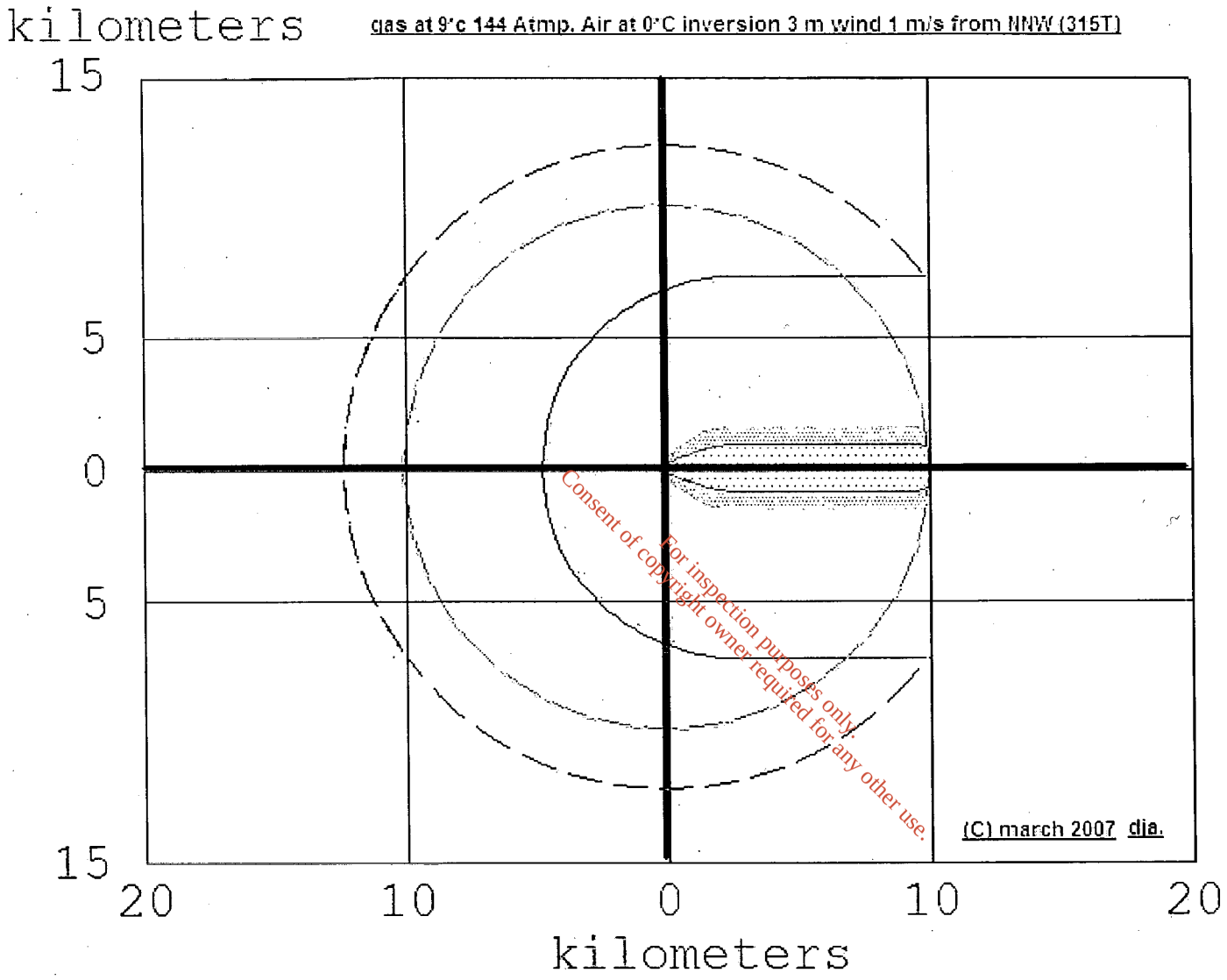


tox field at a point 1km Down Wind for 3629T methanol released 1 mps wind 20C no inversion



wind speed: 1.0 meters/sec 2.25 miles per hour 20°C no inversion class D stability





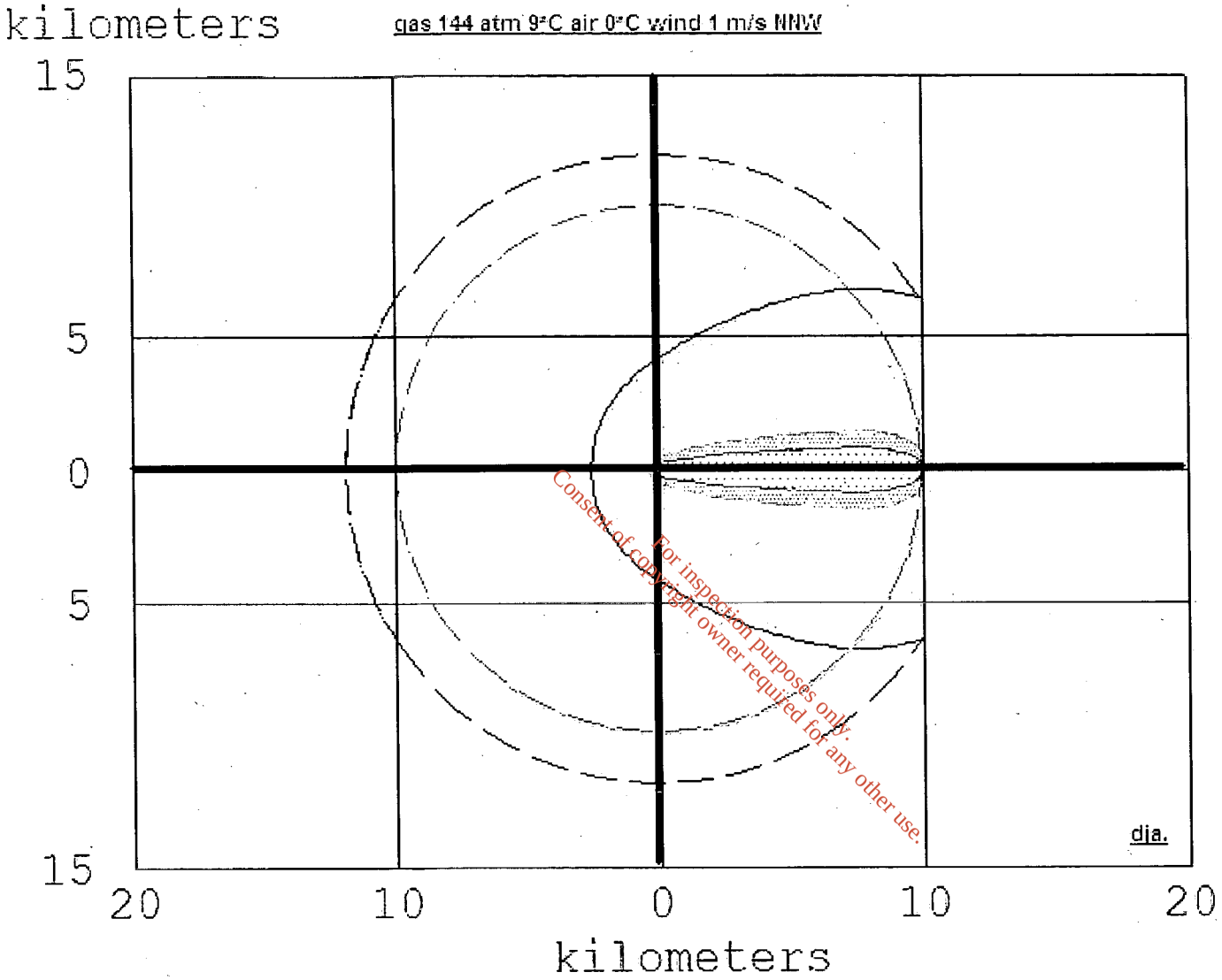
>= 8.0 psi = destruction of buildings

>= 3.5 psi = serious injury likely

>= 0.5 psi

Confidence Lines

Run three



>= 8.0 psi = destruction of buildings

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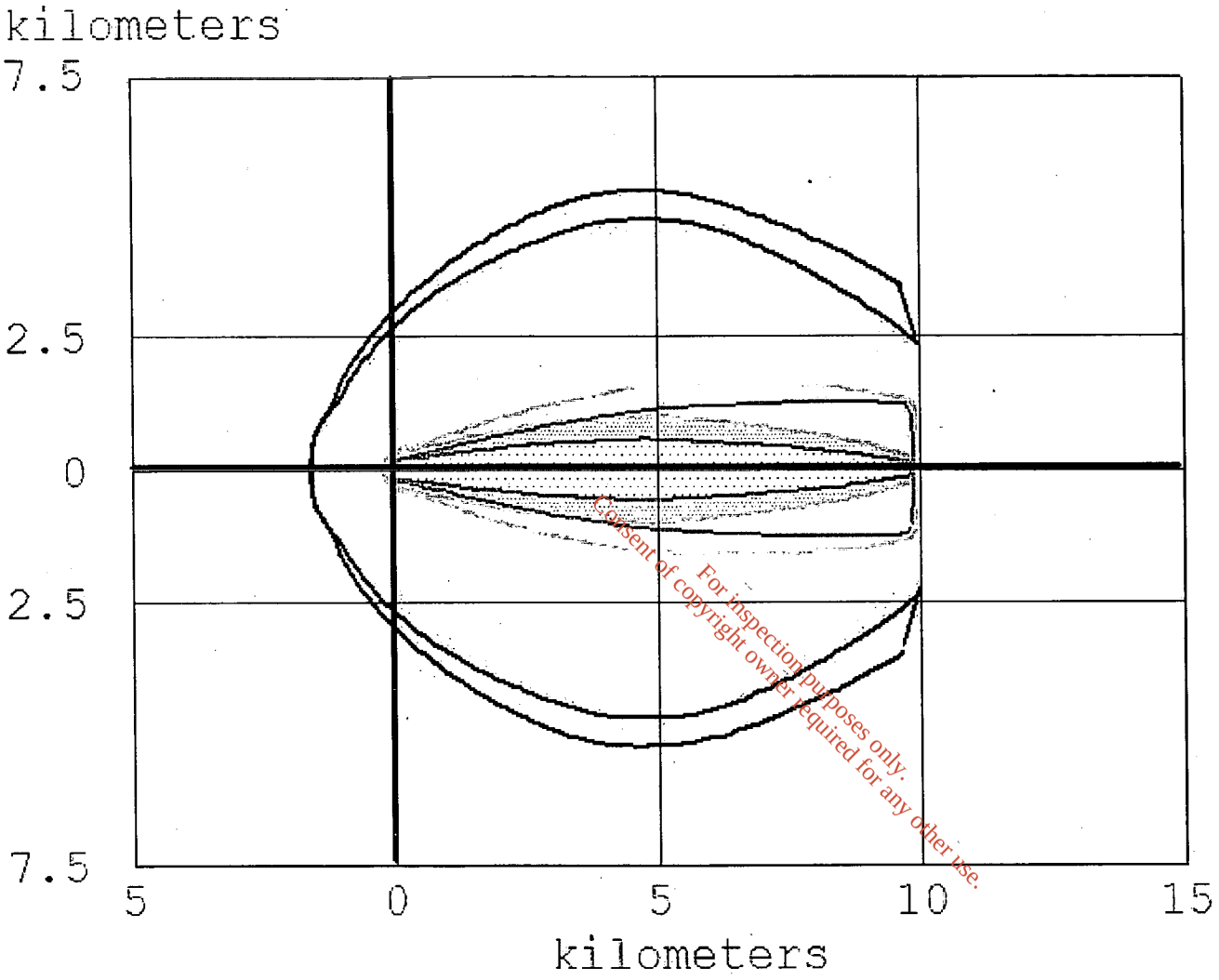
Confidence Lines

RUN two



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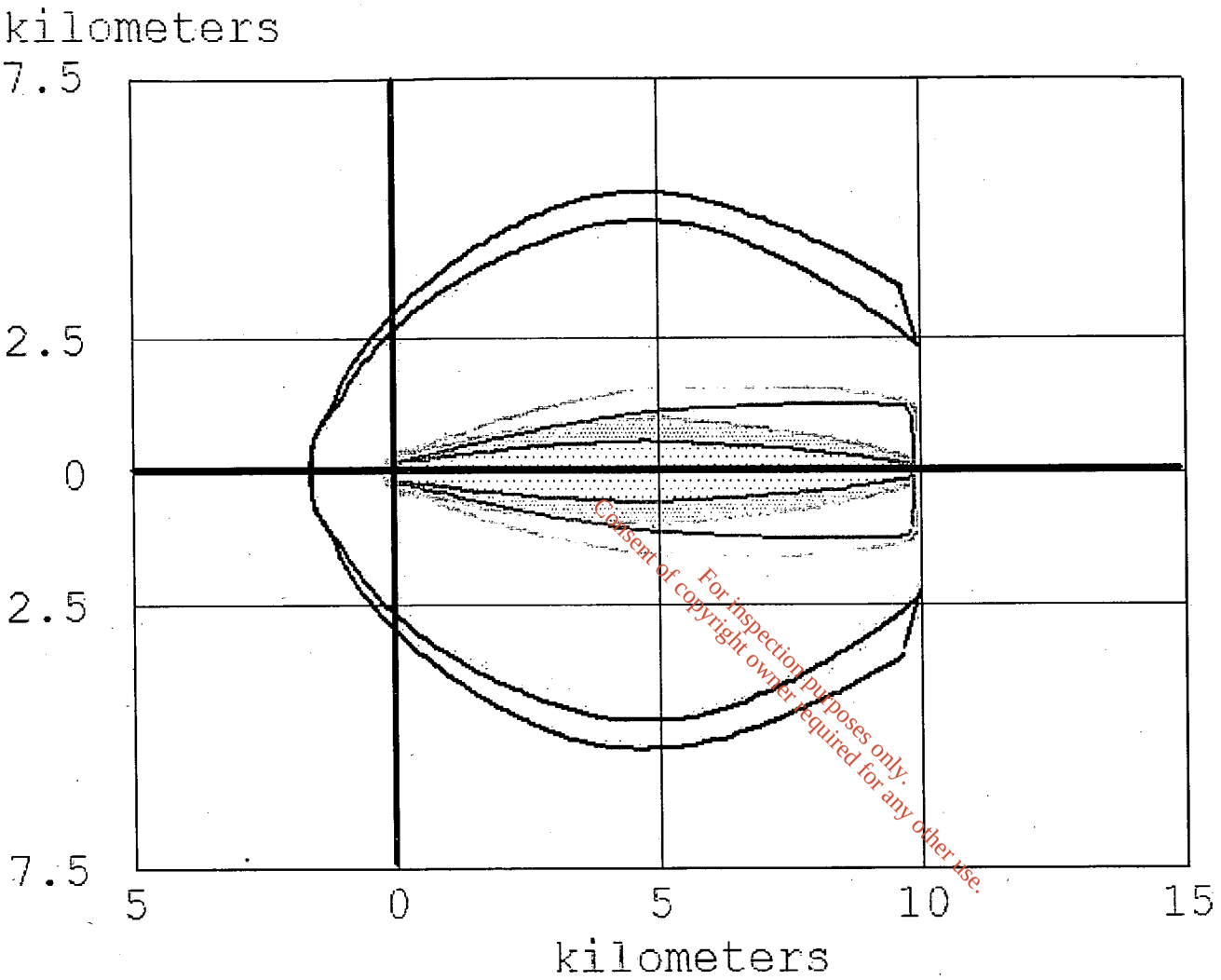
Confidence Lines

Rossport VCE plot 5C 5mph wind 9Km line 144 Atm gas at 5C 0% cloud inversion at 4m



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Confidence Lines

Rossport VCE plot 5C 5mph wind 9Km line 80 Atm gas at 5C 0% cloud inversion at 4m

Damage estimates for common structures based on overpressure (Clancey 1972)

Pressure		Damage
psig	kPa	
0.02	0.14	Annoying noise (137 dB if of low frequency 10-15 Hz)
0.03	0.21	Occasional breaking of large glass windows already under strain
0.04	0.28	Loud noise (143 dB), sonic boom, glass failure
0.1	0,69	Breakage of small windows under strain
0.15	1.03	Typical pressure for glass breakage
0.3	2.07	"Safe distant" (probability 0.% of no serious damage below this value); projectile limit; some damage to house ceilings; 10% window glass broken
0.4	2.76	Limited minor structural damage
0.5-1.0	3.4-6.9	Large and small windows usually shattered; occasional damage ro window frames
0.7	4.8	Minor damage to house structures
1.0	6.9	Partial demolition of houses, made uninhabitable
1-2	6.9-13.8	Corrugated asbestos shattered; corrugated steel or aluminum panels, fastenings fail, followed by buckling; wood panels (standard housing) fastenings fail, panels blown in
1.3	9.0	Steel frame of clad building slightly distorted
2	13.8	Partial collapse of walls and roofs of houses
2-3	13.8-20.7	Concrete or cinder block walls, not reinforced, shattered
2.3	15.8	Lower limit of serious structural damage
2.5	17.2	50% destructionof brickwork of houses
3	20.7	Heavy machines (3000 lb) in industrial building suffered little damage; steel frame building distorted and pulled away from foundations
3-4	20.7-27.6	Frameless, self-framing, steelpanel building demolished; rupture of oil storage tanks
4	27.6	Cladding *of light* industrial buildings ruptured
5	**34.5**	Wooden utility poles snapped; tall hydraulic press (40,000 lb) in building slightly damaged
5-7	34.5-48.2	Nearly complete destruction of houses
7	48.2	Loaded train wagons overturned
7-8	48.2-55.1	Brick panels, 8-12 inches thick, not reinforced,fail by shearing or flexure
9	62.0	Loaded train boxcars completely demolished
10	68.9	Probable total destruction of buildings; heavy machine tools (7000 lb) moved and badly damaged; very heavy machine tools (12,000 lb) survive
300	2068	Limit of crater lip

(dja.) 2005

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1 Corrib Project Risk Assessment Procedure, EEI Doc. No. COR-15-PR-014-0.

3 Design Code Comparison, JPK Document No. 05-2102-02-P-3-801.

4 Population Density Analysis, JPK Document No. 05-2102-02-P-3-860.

5 Onshore Design Basis, JPK Document No. 05-2102-02-P-3-800.

6 Cathodic Protection Design Report, JPK Document No. 05-2102-02-K-3-820.

7 HAZID for Onshore Section, JPK Document No. 05-2102-02-F-3-836.

9 Corrib Export Pipeline. Alignment Sheet 2 of 6. JPK Document No. 05-2102-02-P-0-805.

19 Onshore Sealine Mechanical Design Report, JPK Doc. No. 05-2102-02-M-3-815.

20 Corrosion Monitoring Report, JPK Document No. 05-2102-01-P-3-501.

21 Corrosion Allowance Evaluation, JPK Doc. No. 05-2102-01-P-3-135.

as well as a copy of the "Risk Register" for this pipeline or any changed to the current design.